

PATENT ABSTRACTS OF JAPAN

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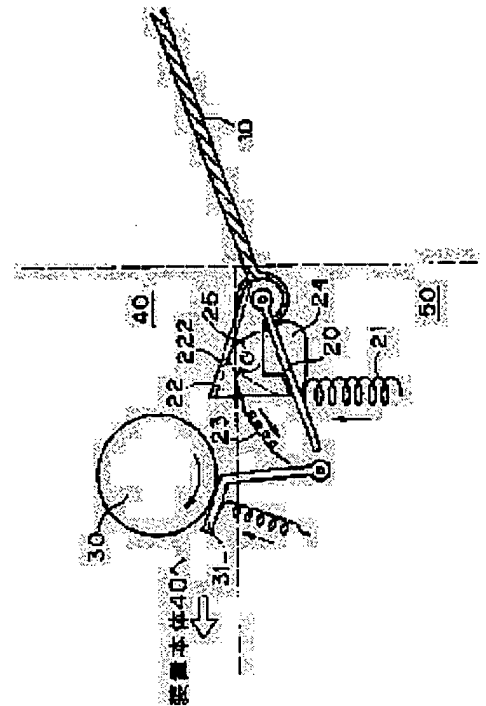
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(54) PAPER CONVEYING DEVICE

(57)Abstract:

PROBLEM TO BE SOLVED: To prevent loosening of paper sheets on a manual insertion tray when a conveying unit is pulled out of a device body for processing of a jam.

SOLUTION: When a conveyance unit 50 is pulled out from a device body 40, a lift plate 20 energized in a state to be pressed against a paper feed roller 30 to handle paper sheets on a manual insertion tray is depressed by a depress cam 22 to depress the lift plate 20 through the force of a tensile spring 23 arranged at the conveyance unit 50. Meanwhile, a rotary cam 24 is arranged on the device body 40 side and when paper sheets are fed, the depress cam 22 is lifted by the rotary cam 24 and a force to depress the lift plate 20 is released and the device body brought into a paper feedable state.



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CLAIMS**[Claim(s)]**

[Claim 1] A form transport device characterized by providing the following A detachable tray in which it exposes to a method of the outside of the main part of equipment, and a form is laid A feed roller which rotates so that paper may be fed to a form which was prepared in said detachable tray outlet side bottom, and was laid on said detachable tray in said main part of equipment When it is prepared in said detachable tray outlet side bottom and energized upward It has a lift board which can take a condition which pushes against said feed roller a form laid on said detachable tray, and to which paper can be fed. Paper is fed to a form laid on said detachable tray with said feed roller and said lift board in said main part of equipment. A part of form conveyance system [at least] which is the form transport device which conveys this form in accordance with a predetermined conveyance path, and contains said detachable tray is constituted as a conveyance unit withdrawal out of said main part of equipment. A lift board position control means which makes said lift board a condition which can be form set by resisting energization force which energizes said lift board upward, and depressing said lift board when said conveyance unit is pulled out out of said main part of equipment at least

[Claim 2] A form transport device according to claim 1 characterized by providing the following A push-down member energized downward so that said lift board position control means might be formed in said conveyance unit side and might make said lift board said condition which can be form set in contact with said lift board By engaging with said push-down member and raising said push-down member, when it is prepared in said main part side of equipment and said conveyance unit is set to said main part of equipment, contact to said push-down member and said lift board is canceled, said lift board is made into said condition to which paper can be fed, and is lifted, and it is a member.

[Claim 3] By raising, when [said] said conveyance unit is set to said main part of equipment, a member By engaging with said push-down member and raising said push-down member By [which cancel contact to said push-down member and said lift board, and makes said lift board said condition to which paper can be fed / which raise and raises a condition and said push-down member] raising and canceling force A form transport device according to claim 2 constituted switchable in a discharge condition which makes said lift board a condition which can be form set according to downward energization force of said push-down member.

[Claim 4] Only when it raises, and said conveyance unit is said time of being set to said main part of equipment and a member feeds paper to a form on said detachable tray in said main part of equipment, it is said form transport device according to claim 3 constituted so that it might raise and a condition might be taken.

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DETAILED DESCRIPTION**[Detailed Description of the Invention]**

[0001]

[The technical field to which invention belongs] This invention relates to the form transport device used in facsimile, a printer, a copying machine, scanner equipment, etc.

[0002]

[Description of the Prior Art] Conventionally, in the form transport device used in facsimile, a printer, a copying machine, scanner equipment, etc., there are many things equipped with the detachable tray for manual paper feeds exposed to the method of the outside of the main part of equipment.

[0003] An example of the conventional printer which equipped drawing 8 with such a detachable tray 10 is shown. As shown in this drawing 8 (a), generally the form P laid on such a detachable tray 10 It is prepared in the detachable tray 10 outlet side bottom, and is prepared in the detachable tray 10 outlet side bottom as well as the lift board 20 energized upward with the pressurization spring 21. By the ** member 31 The configuration to which is forced on the feed roller 30 which rotates with the detachable tray 10 outlet side up side, it deals with, and paper is fed in the main part 40 of equipment is common. The form P to which paper was fed in this main part 40 of equipment is discharged by the discharge tray on the upper surface of equipment through the predetermined conveyance path shown with an alternate long and short dash line.

[0004] In order to expose the conveyance path within the main part 40 of equipment and to perform jam processing, covering of the main part 40 of equipment is constituted, enabling free closing motion, or it consists of such form transport devices in many cases so that it can pull out from the main part of equipment by making a part of form conveyance system into a conveyance unit.

[0005] As shown in drawing 8 (b), it consists of printers of drawing 8 so that the conveyance unit 50 containing the detachable tray 10 mentioned above can be pulled out to the front-face side of equipment (the direction of an arrow head in drawing). Since the space for pulling out the form cassette 51 arranged at the lower part of this conveyance unit 50 is taken and it is usually installed in this front-face side of equipment, a printer is considering as the configuration which pulls out the conveyance unit 50 to the front-face side of equipment in this way, uses this space as a space for pulling out the conveyance unit 50, and has become what has easy jam processing.

[0006]

[Problem(s) to be Solved by the Invention] However, since the constraint from the upper part with the feed roller 30 will be lost as shown in drawing 8 (b) if the conveyance unit 50 is pulled out for jam processing etc. when two or more sheets of forms P are laid on the detachable tray 10, it raises and sells with the lift board 20 with which the form P on a detachable tray 10 is energized upward, and a member 31 is exceeded, and it is rose ***** to the upper surface of the conveyance unit 50. For this reason, in order to re-set the conveyance unit 50 after jam processing, this form P for which carried out rose **** and it waited had to be repaired in the bunch, and it had to set on the detachable tray 10 once again, and in spite of having been the unitization of the form conveyance system for attaining easy-ization of jam processing, there was a problem that the operability of jam processing was bad.

[0007] Moreover, in the form transport device constituted so that the conveyance unit 50 might be pulled out to the front-face side of equipment with such a detachable tray 10, in case Form P is set on a detachable tray 10, in order to form the crevice which sets Form P between the lift board 20 and the feed roller 30, the lift board 20 had to be depressed manually and there was a problem that the operability of a form set was also bad.

[0008] This invention aims at offering the form transport device which raised the operability of the form set to a detachable tray while the form on a detachable tray prevents rose **** striped ***** and it acquires the high operability of jam processing, when a conveyance unit is pulled out though considered as the configuration which is

made in view of the above-mentioned technical problem, pulls out a conveyance unit from the main part of equipment, and performs jam processing.

[0009]

[Means for Solving the Problem] In order to solve the above-mentioned technical problem, a form transport device concerning this invention A feed roller which rotates so that paper may be fed to a form which was exposed to a method of the outside of the main part of equipment, was prepared in a detachable tray in which a form is laid, and said detachable tray outlet side bottom, and was laid on said detachable tray in said main part of equipment, When it is prepared in said detachable tray outlet side bottom and energized upward It has a lift board which can take a condition which pushes against said feed roller a form laid on said detachable tray, and to which paper can be fed. Paper is fed to a form laid on said detachable tray with said feed roller and said lift board in said main part of equipment. A part of form conveyance system [at least] which is the form transport device which conveys this form in accordance with a predetermined conveyance path, and contains said detachable tray is constituted as a conveyance unit withdrawal out of said main part of equipment. When said conveyance unit is pulled out out of said main part of equipment at least, it has a lift board position control means which makes said lift board a condition which can be form set by resisting energization force which energizes said lift board upward, and depressing said lift board (claim 1).

[0010] Since a lift board is depressed and it will be in a condition which can be form set with a lift board position control means when a conveyance unit is pulled out out of a main part of equipment according to this configuration, in order to perform jam processing etc., rose **** striped ***** is prevented from a detachable tray by lift board with which a form laid on a detachable tray is energized upward.

[0011] A push-down member energized downward so that this lift board position control means might be formed in said conveyance unit side and said lift board might be made into said condition which can be form set in contact with said lift board, When it is prepared in said main part side of equipment and said conveyance unit is set to said main part of equipment By engaging with said push-down member and raising said push-down member, contact to said push-down member and said lift board can be canceled, and it can constitute by [which make said lift board said condition to which paper can be fed] raising and having a member (claim 2).

[0012] When a conveyance unit is pulled out out of a main part of equipment according to the lift board position control means by such configuration A lift board is depressed by push-down member energized downward, and will be in a condition which can be form set. While rose **** striped ***** is prevented for a form laid on a detachable tray, when a conveyance unit is set to a main part of equipment Since energization force which energizes a lift board downward is lost by a push-down member raising and being raised by member, it changes into a condition which was forced on a feed roller by upward energization force and to which paper can be fed.

[0013] Furthermore, even if it is said time of a conveyance unit being set to a main part of equipment by raising, as for a member By [which cancel contact to a push-down member and a lift board, and makes a lift board a condition to which paper can be fed by engaging with a push-down member and raising a push-down member / which raise and raises a condition and a push-down member] raising and canceling force It is desirable to constitute a discharge condition which makes a lift board a condition which can be form set according to downward energization force of a push-down member switchable (claim 3).

[0014] Thus, if it raises, a member is raised and a condition and a discharge condition are constituted possible [a switch], even if it is a time of a conveyance unit being set to a main part of equipment, by the way, it can consider as a condition which is necessity and to which paper can be fed that a chisel lift board was pushed against a feed roller.

[0015] Especially, it is this time of raising and a conveyance unit being set to a main part of equipment in a member, and only when feeding paper to a form on a detachable tray in a main part of equipment, if it constitutes so that it may raise and a condition may be taken (claim 4), since it will be in a condition which can be form set of raising a push-down member and that a lift board was depressed, in addition to the time of feeding, operability high about form set actuation to a detachable tray will be

[0016]

[Embodiment of the Invention] One operation gestalt of the form transport device which starts this invention at drawing 1 is shown. This form transport device is applied to a printer, and the equipment lower part consists of main parts 40 of equipment withdrawal as a conveyance unit 50 at the front-face side of equipment.

[0017] First, the outline of the configuration of the whole equipment and actuation is explained.

[0018] The drawing of longitudinal section which saw this printer from the left lateral to drawing 2 is shown. In this drawing, the same sign is conventionally given to the same component as equipment shown in drawing 8 , and the alternate long and short dash line within the main part 40 of equipment shows the conveyance path of a form.

[0019] This equipment equips the form cassette 51 prepared in the lower part of equipment in the shape of a drawer, and

the front-face side of equipment with two of the detachable trays 10 prepared free [closing motion] as a supply means of a form, and is constituted for these according to a user's selection, enabling free change over.

[0020] one sheet of form of the best location is sold with the feed roller 33, the form set to the form cassette 51 is fed to a conveyance path, and the conveyance direction makes a U-turn by the reversal koro 52 -- having -- a resist roller pair - - it results in 53. This resist roller pair 53 forms a deflection in a form by having stopped, when a form is conveyed, after that, by beginning rotation to predetermined timing, arranges the tip of a form and conveys it in the image formation section 54.

[0021] The image formation section 54 around the photo conductor drum 541 arranged at the conveyance path bottom Up, insert the developer unit 543 into the optical unit 542 for exposure, and the method of the right, insert a conveyance path below, and the cleaning unit 545 is arranged and constituted by the imprint roller 544 and the left. When this photo conductor drum 541 rotates in the conveyance direction of a form, a well-known image formation process is performed to the form which has between this photo conductor drum 541 and the imprint roller 544 conveyed.

[0022] in this way, the form with which the image was imprinted -- a fixing roller pair -- the discharge roller pair after 55 was fixed to the image -- the discharge tray 58 with outside with which was further conveyed by 561 and the exterior of an equipment main part was equipped according to the change over condition of the change over guide 57 or the 2nd, and the 3rd -- pass discharge roller pair 562,563 -- it is discharged by either of the up discharge trays 59 of the upper part of an equipment main part.

[0023] On the other hand, after image formation is performed by the lift board 20 and the same conveyance procedure as the form to which paper is fed from the sheet paper cassette 51 which dealt with one sheet of the best location with the member 31 and the feed roller 30 by selling, and paper was fed to the conveyance path within the main part 40 of equipment, and was mentioned above, the form set to the detachable tray 10 is discharged by the discharge tray 58 with outside, or the up discharge tray 59 so that it may explain in full detail behind.

[0024] In this form transport device (printer) constituted as mentioned above, the lower part containing the form cassette 51 and a detachable tray 10 of the equipment shown with a dashed line in drawing 2 consists of main parts 40 of equipment withdrawal as a conveyance unit 50 with the form cassette 51 (refer to drawing 1). Thus, jam processing can be performed now by constituting from this equipment so that it can take out from the main part 40 of equipment by making a part of form conveyance system into the conveyance unit 50. Especially, since the direction of a drawer of this conveyance unit 50 is in agreement with the direction of a drawer of the form cassette 51, the space by the side of the front face of equipment made into the drawer space of the form cassette 51 (right-hand side of drawing 2) can be operated as a drawer space of the conveyance unit 50 at the time of jam processing, and especially jam processing is usually easy.

[0025] Next, the manual paper feed device from a detachable tray 10 is explained to details using drawing 3 - drawing 7 .

[0026] The configuration of this detachable tray 10 circumference portion is shown in drawing 3 . As shown in this drawing, around this detachable tray 10 The feed roller 30 and the **** member 31 energized upward so that it may **** on this feed roller 30, The lift board 20 formed in the feed roller 30 bottom, and the lift board pressurization spring 21 which energizes this lift board 20 upward, The push-down cam 22 which depresses a lift board, the tension spring 23 which energizes this push-down cam 22 downward, and the rotating cam (raising member) 24 grade for driving this push-down cam 22 up and down are arranged.

[0027] Drawing 4 expresses only what was prepared in the conveyance unit 50 side among the configuration members of the these detachable tray 10 circumference. That is, this drawing 4 shows the condition of having pulled out the conveyance unit 50 from the main part 40 of equipment.

[0028] As shown in this drawing, it can open a detachable tray 10 and close freely to the main part 40 of equipment by being attached in the axis of rotation 26 prepared in the conveyance unit 50 free [rotation]. The lift board 20 formed in this detachable tray 10 outlet side bottom is attached in the same axis of rotation 26 as the above-mentioned detachable tray 10 free [rotation], and is energized upward with the lift board pressurization spring 21 from the bottom. The push-down cam (push-down member) 22 is also attached in the axis of rotation 26 with which this detachable tray 10 was attached free [rotation], and is energized downward with the tension spring 23.

[0029] The perspective diagram of the push-down cam 22 circumference is shown in drawing 5 . As are shown in this drawing, and this push-down cam 22 is arranged at the end side of the cross direction (horizontally it intersects perpendicularly in the form conveyance direction) W of the lift board 20 and is shown in drawing 4 , that leg 221 contacts the end section of the lift board 20 from a top, and the push-down cam 22 is depressing this lift board 20 according to the downward energization force of the tension spring 23.

[0030] In this way, the edge by the side of nothing and its main part 40 of equipment deals with whenever [tilt-angle /

of a detachable tray 10 and abbreviation identitas], and the depressed lift board 20 is located below the abdomen 311 of a member 31. For this reason, even if it slides down into an outlet side (main part 40 side of equipment) the form set on this detachable tray 10 by the inclination of a detachable tray 10 and the depressed lift board 20, it is sold, contacts the abdomen 311 of a member 31, and stops on this detachable tray 10.

[0031] Namely, according to this equipment, the lift board 20 is energized so that Form P may be pushed up with the lift board pressurization spring 21, but When the push-down cam 22 depresses the lift board 20 according to the energization force of the tension spring 23 In the condition (drawing 4 , drawing 5) that the conveyance unit 50 was pulled out from the main part 40 of equipment The form set on the detachable tray 10 does not have rose **** striped ***** in the conveyance unit 50 upper surface, therefore the operability in the case of pulling out the conveyance unit 50 and performing jam processing is high.

[0032] Next, it returns to drawing 3 and the condition of having inserted in the main part 40 of equipment the conveyance unit 50 constituted in this way is explained.

[0033] If it compares with drawing 4 which mentioned this drawing 3 above, as it understands, the rotating cam 24 constituted by the feed roller 30 and the abbreviation triangle among the members shown in this drawing 3 is the member prepared in the main part 40 side of equipment.

[0034] The feed roller 30 is in contact with the **** member 31 energized upward, sells a form, and it can be rotated in order to feed paper to the conveyance path within the main part 40 of equipment.

[0035] A rotating cam 24 is in the condition that the conveyance unit 50 was set to the main part 40 of equipment, and is attached in the location where the upper limit section engages with rising wood 222 inferior surface of tongue of the push-down cam 22 mentioned above at the rotating cam shaft 25. As the attaching position to the cam shaft 25 of this rotating cam 24 is shown in drawing 3 , eccentricity is carried out to the center of rotation of a cam shaft 25, and the height location of that upper limit is changed up and down by rotating this rotating cam 24 according to rotation of a cam shaft 25.

[0036] Through the spring clutch device which is not illustrated, it connects with the rotation drive of the feed roller 30, and this cam shaft 25 is constituted so that half-rotation [every] (180-degree rotation) rotation actuation may be carried out to the predetermined timing mentioned later.

[0037] The condition that drawing 3 has the upper limit height location of this rotating cam 24 in the lowest location is shown, and few crevices are formed in this condition between the upper limit section of a rotating cam 24, and rising wood 222 inferior surface of tongue of the above-mentioned push-down cam 22. Therefore, the push-down cam 22 is depressing the lift board 20 according to the downward energization force of the tension spring 23 as well as the condition of having pulled out the conveyance unit 50 shown in drawing 4 from the main part 40 of equipment. Thus, if the lift board 20 is depressed, since it is possible to set a form on a detachable tray 10, suppose that such a condition is called "the condition which can be form set." In addition, the lift board 20 is always depressed and the condition of having pulled out the conveyance unit 50 mentioned above is also in "the condition which can be form set."

[0038] A rotating cam 24 shows the condition of having half-rotated, by a cam shaft 25 carrying out half-rotation (180-degree rotation) to drawing 6 from the condition of drawing 3 . In this condition, as for the above-mentioned push-down cam 22, that rising wood 222 inferior surface of tongue is raised by the upper part of a rotating cam 24. If the push-down cam 22 is raised up, the lift board 20 which was having that upper surface pressed down by the leg 221 of this push-down cam 22 is pushed up by the upward energization force of the lift board pressurization spring 21, and will be in the condition of having been pushed against the inferior surface of tongue of the feed roller 30 located in that upper part, as [show / in drawing 6].

[0039] Thus, the form set on the detachable tray 10 when the feed roller 30 rotated in the condition that the lift board 20 was pushed against the feed roller 30 will be sent out to the main part 40 side of equipment with this lift board 20 and the feed roller 30, and it will be further pushed against the feed roller 30, and will be sold with the ** member 31 and the feed roller 30, and paper will be fed to the conveyance path within the main part 40 of equipment. Then, such a lift board 20 decides to call the condition of having been pushed against the feed roller 30 "the condition to which paper can be fed."

[0040] As mentioned above, when a rotating cam 24 rotates by rotation of a cam shaft 25, the condition (drawing 3) which can be form set, and the condition (drawing 6) to which paper can be fed are switched for the lift board 20 through the push-down cam 22.

[0041] In addition, in the configuration of this form transport device, the push-down cam 22 energized so that the lift board 20 might be depressed, the rotating cam 24 which achieves the function to raise this push-down cam 22, and the cam shaft 25 grade which carries out the rotation drive of this rotating cam 24 further are making the lift board position control means.

[0042] Next, the timing of actuation of each part from the operating state of the rotating cam 24 by rotation of this cam shaft 25 to feeding is explained.

[0043] The timing chart of actuation of each part is shown in drawing 7. In the operating state of a rotating cam 24, and drawing 7 (b), the operating state of the push-down cam 22 and drawing 7 (c) show the operating state of the lift board 20, and drawing 7 (d) shows [drawing 7 (a)] the operating state of a feed roller, respectively.

[0044] As shown in this drawing, the height location of the upper limit section of a rotating cam 24 is low, when it is in the condition (discharge condition) of not raising the rising wood 222 of the push-down cam 22 (condition of drawing 3), the push-down cam 22 is in the condition of having depressed the lift board 20, and the lift board 20 is in the condition which can be form set by being depressed in this way. And in this condition, the feed roller 30 is a idle state and feed actuation is not performed.

[0045] When it is in the condition (raising condition) the height location of the upper-limit section of a rotating cam 24 became high, and, on the other hand, raised the rising wood 222 of the push-down cam 22 by half-rotation (180 degree rotation) of a cam shaft 25 (the condition of drawing 6), a push-down cam 22 is raised up, and will be in the shunting condition whose force which depresses the lift board 20 is lost, and a lift board 20 is in the condition which was forced on the feed roller 30 and In this condition, the feed roller 30 is in the rotation (feeding) condition, and the form on the detachable tray 10 forced on the feed roller 30 with the lift board 20 is sold, it sells by the member 31, and feed actuation is performed toward the inside of the main part 40 of equipment.

[0046] Namely, only when feeding is performed by rotating the feed roller 30 in this equipment When a rotating cam 24 raises and it considers as a condition, and the push-down cam 22 is raised in connection with this, the lift board 20 is in the condition to which paper can be fed and feeding is not performed Also when the conveyance unit 50 is pulled out from the main part 40 of equipment, a rotating cam 24 is made into a discharge condition, and in connection with this, the push-down cam 22 depresses the lift board 20, and is [include] always in the condition which can be form set.

[0047] Therefore, according to this equipment, the actuation which forms the space for depressing the lift board 20 for a detachable tray 10 manually at the time of an open beam, and setting a form is not needed, but the operability at the time of setting a form to a detachable tray 10 is high.

[0048] Moreover, even if it is the case where the lift board 20 is in which condition of the condition (condition of drawing 3) which can be form set, or the condition (condition of drawing 6) to which paper can be fed If the conveyance unit 50 is pulled out for jam processing etc., since the rotating cam 24 which can raise the push-down cam 22 is attached in the main part 40 side of equipment, The lift board 20 is depressed by the energization force of the hauling spring 23 which the push-down cam 22 is not raised and energizes this push-down cam 22 downward, and it will surely be in the condition which can be form set according to it. Therefore, rose **** striped ***** does not have the form set on the detachable tray 10, and the operability of jam processing will also become high.

[0049] As mentioned above, although it was based on the operation gestalt and this invention was explained, this invention is not limited to the above-mentioned operation gestalt, and may be constituted as follows.

(1) Although the rotating cam 24 was constituted in the abbreviation triangle configuration, and it constituted in the above-mentioned operation gestalt so that the push-down cam (push-down member) 22 might be raised and raised by half-rotation (180-degree rotation) actuation of a cam shaft 25 and a condition and this discharge condition of which it raised and the force was canceled might be switched If the configuration of this rotating cam 24 is a configuration which can take the condition of canceling with the condition of raising the push-down cam 22, what kind of configuration is sufficient as it, for example, it is good also as an ellipse form etc.

[0050] It is good also as a configuration which raises by rotation actuation of a cam shaft 26, and raises the push-down cam (push-down member) 22 further again by the lever member which does not switch a condition and a discharge condition but carries out rocking actuation by a solenoid etc. and which raises and switches a condition and this discharge condition of which it raised and the force was canceled.

(2) In the above-mentioned operation gestalt, although considered as the configuration which uses the rotation driving source of the feed roller 30 through a clutch as a driving source of a rotating cam 24, a driving source separate from the driving source of the feed roller 30 may be used. Or it is good also as a configuration which shares driving sources, such as other form conveyance rollers.

(3) In the above-mentioned operation gestalt, in the condition that the conveyance unit 50 was pulled out from the main part 40 of equipment, although considered as the configuration which stops on a detachable tray 10 by the tip selling the form set on the detachable tray 10, and contacting the abdomen 311 of a member 31 When it sells, member with an another member 31 is prepared in such a location adjacent to the form tip on a detachable tray 10 and this another member draws out the conveyance unit 50 from the main part of equipment, it is good also as a configuration which stops a form on a detachable tray 10.

(4) Although the printer by which the detachable tray 10 was formed in the front face (1 side) of the main part 40 of equipment free [closing motion] was made into the example in the above-mentioned operation gestalt Even if it is equipment which the candidate for application of this invention is not limited to a printer, could apply it to facsimile, a copying machine, scanner equipment, etc., and was equipped with the detachable tray 10 which cannot be opened and closed Or it is applicable even if it is equipment with which the detachable tray 10 was formed in the upper surface of the main part 40 of equipment.

[0051]

[Effect of the Invention] As mentioned above, since it will be in the condition which can be form set that the lift board was depressed, with a lift board push-down means when a conveyance unit is pulled out out of the main part of equipment according to this invention or the form transport device to cut, in order to perform jam processing etc., The form laid on the detachable tray can raise the operability of jam processing which can prevent rose **** striped ***** from a detachable tray, and is performed by pulling out a conveyance unit out of the main part of equipment with the lift board energized upward.

[0052] Moreover, the push-down member energized downward so that a lift board push-down means might be established at a conveyance unit side and a lift board might be made into the condition which can be form set, When the configuration which is prepared in the main part side of equipment, raises said push-down member, and makes a lift board the condition to which paper can be fed and which raised and was equipped with the member, then a conveyance unit are pulled out out of the main part of equipment A lift board is depressed by the push-down member and will be in the condition which can be form set. While rose **** striped ***** is prevented for the form laid on the detachable tray, when the conveyance unit is set to the main part of equipment, it will be in the condition to which paper can be fed about a lift board, and feed actuation can be performed because raise and a member raises a push-down member.

[0053] Furthermore, by raising, even if it is a time of a conveyance unit being set to the main part of equipment, a member If engage with a push-down member and a push-down member is raised, a lift board is made into the condition to which paper can be fed, and is lifted and a condition and this discharge condition that raises, cancels the force and makes a lift board the condition which can be form set are constituted switchable Even if it is a time of a conveyance unit being set to the main part of equipment, when setting a form, operability of a form set can be made high by considering as the condition which can be form set.

[0054] Especially, it is this time of raising and a conveyance unit being set to the main part of equipment in a member, and only when feeding paper to the form on a detachable tray in the main part of equipment, if it constitutes so that it may raise and a condition may be taken, in addition to the time of feeding, since [for which a push-down member is raised] the lift board is depressed, a form can be set to a detachable tray at any time, and high operability will be acquired about form set actuation.

[Translation done.]

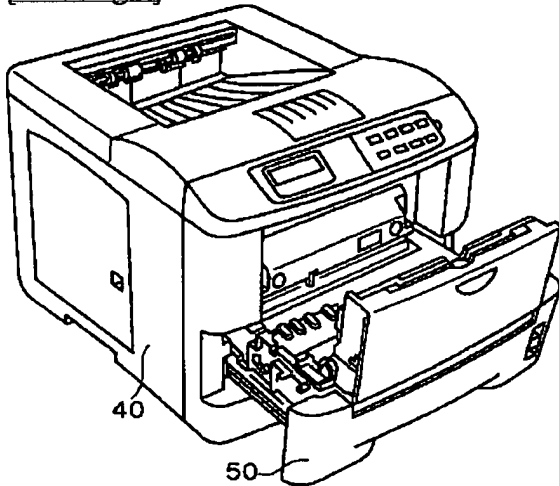
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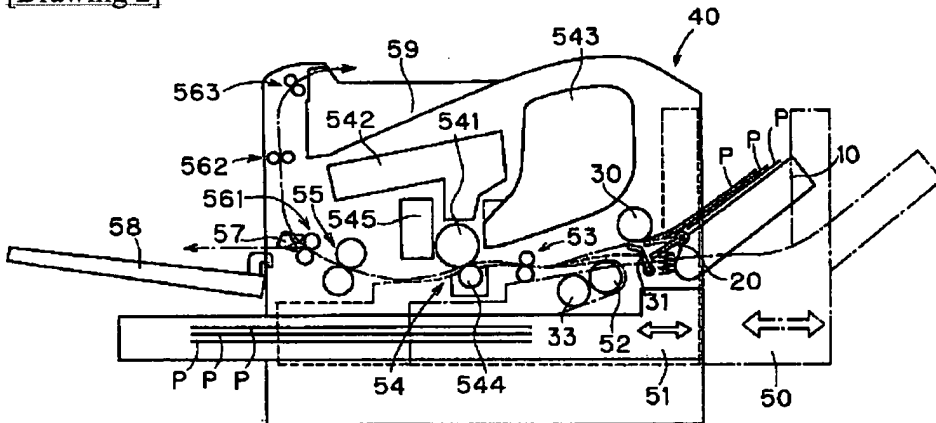
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3. In the drawings, any words are not translated.

DRAWINGS

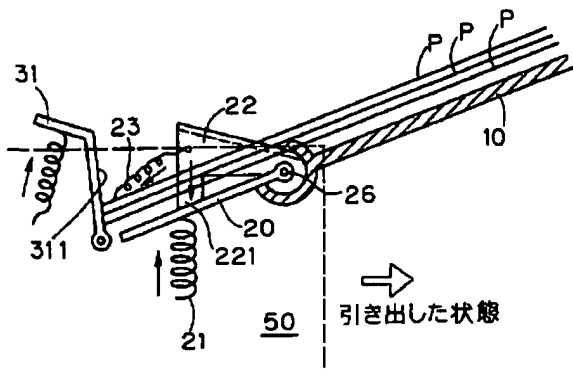
[Drawing 1]



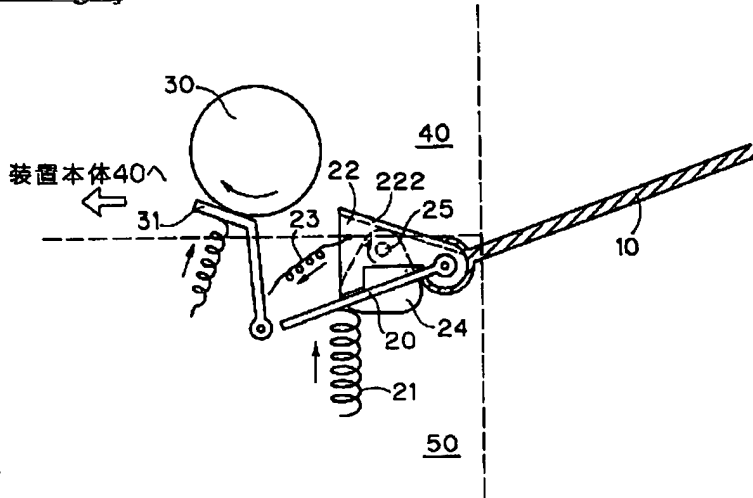
[Drawing 2]



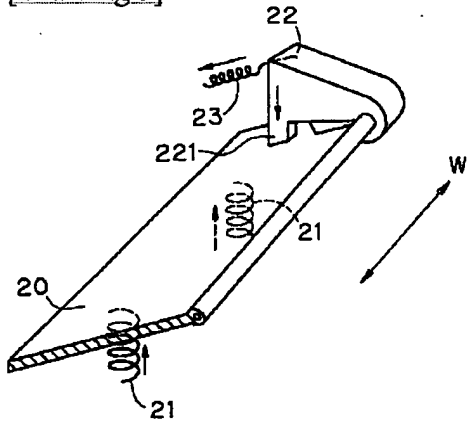
[Drawing 4]



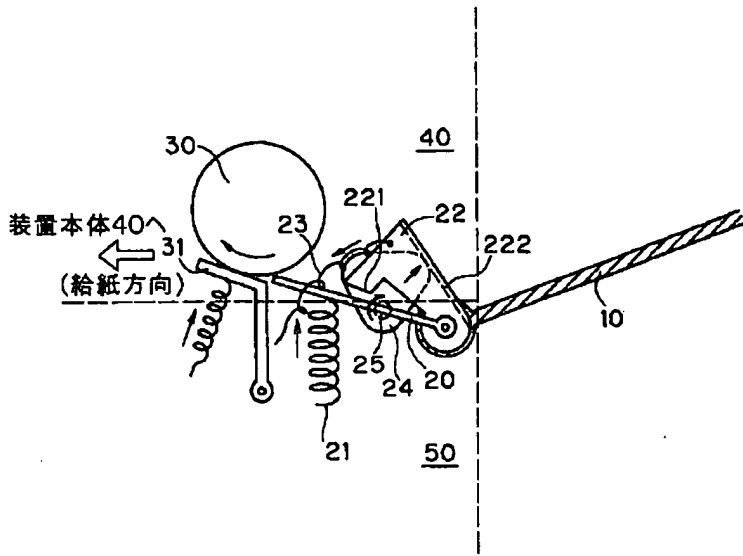
[Drawing 3]



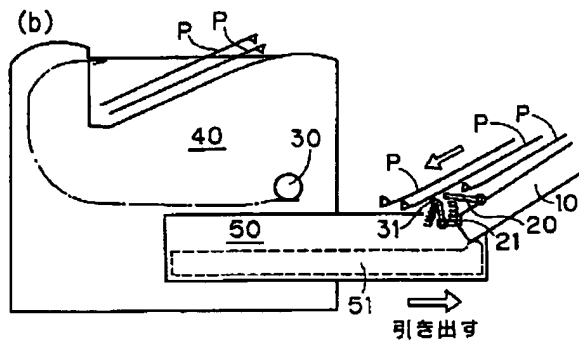
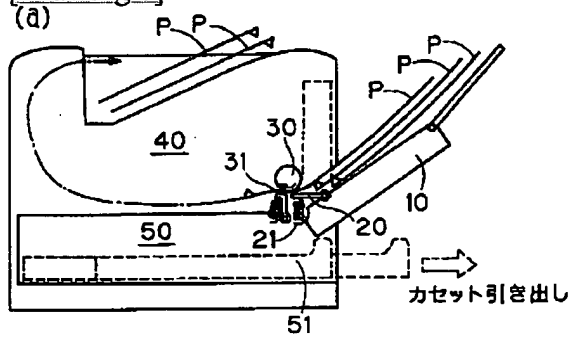
[Drawing 5]



[Drawing 6]



[Drawing 8]



[Drawing 7]

(a) 回転カム24

持上げ状態

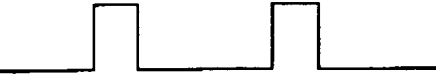
解除状態



(b) 押下げカム22

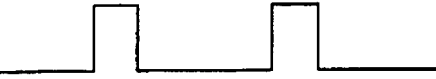
待避状態

押下げ状態



(c) リフト板20

給紙可能状態

用紙セット
可能状態

(d) 給紙ローラ30

回転(給紙)
状態

停止状態



[Translation done.]